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Essex Group, Inc.
Industrial Products Division

2816 North Main Street
Rockford, Illinois 61103-3194
815/877-6025

Jan. 20, 1993

Mr. G. Hamper
EPA Region 5
77 W. Jackson
Chicago, IL 60604

→ NOTIFICATION FILE
→ ILD 062411285

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JAN 25 1993

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Mr. Hamper,

This letter is in reference to a Waste Analysis Plan for elementary neutralization of Nitric Acid. Per our conversation 1/19/93, this facility would follow 40 CFR 264.1(g)(6). In addition, this facility will petition to comply with 40 CFR 268.7(a)(4)(ii).

Thank you for your time and efforts.

Best regards,

Robert J. Cramer

Robert J. Cramer

Copy: R. Toppe Plant Manager



Essex Group, Inc.
Industrial Products Division

2816 North Main Street
Rockford, Illinois 61103-3194
815/877-6025

WASTE ANALYSIS PLAN
FOR
NITRIC ACID

Pursuant to 40 CFR 268.7(a)(4).

Neutralization of Nitric Acid (CAS# 7697-37-2, Hydrogen Nitrate in 70% water) occurs on-site at this location. Neutralization is established in three steps:

1. The Nitric Acid is mixed with cold water. The volume of water shall be a minimum of four times the volume of Nitric Acid.
2. Caustic Soda (CAS# 1310-73-2, Sodium Hydroxide in 45-55% water) shall be added until the pH is between 6 and 8. [As per the alternative treatment standards of Table 1, 40 CFR 268.45(2).] Care shall be observed during mixing to not exceed 120 degrees Fahrenheit.
3. The mixture of water and Sodium Nitrate Salts shall be disposed to the Sanitary drain, or a local waste water treatment facility.

The only characteristic of the Nitric Acid as hazardous prior to treatment is Corrosivity (a low pH). The amount of spent Nitric Acid generated at this facility is less than one gallon per month. This facility has an approved SLUG CONTROL PLAN in cooperation with the local POTW - Rock River Water Reclamation District, Rockford IL.

(2) Enclosures: MSDS Nitric Acid
MSDS Caustic Soda

W	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

IX. DESCRIPTION OF HAZARDOUS WASTES (continued from front)

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1 F 0 0 3 23 - 26	2 F 0 0 4 23 - 26	3 F 0 0 5 23 - 26	4 23 - 26	5 23 - 26	6 23 - 26
7 23 - 26	8 23 - 26	9 23 - 26	10 23 - 26	11 23 - 26	12 23 - 26

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13 23 - 26	14 23 - 26	15 23 - 26	16 23 - 26	17 23 - 26	18 23 - 26
19 23 - 26	20 23 - 26	21 23 - 26	22 23 - 26	23 23 - 26	24 23 - 26
25 23 - 26	26 23 - 26	27 23 - 26	28 23 - 26	29 23 - 26	30 23 - 26

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31 23 - 26	32 23 - 26	33 23 - 26	34 23 - 26	35 23 - 26	36 23 - 26
37 23 - 26	38 23 - 26	39 23 - 26	40 23 - 26	41 23 - 26	42 23 - 26
43 23 - 26	44 23 - 26	45 23 - 26	46 23 - 26	47 23 - 26	48 23 - 26

D. LISTED INFECTIOUS WASTES. Enter the four-digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49 23 - 26	50 23 - 26	51 23 - 26	52 23 - 26	53 23 - 26	54 23 - 26
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E. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. (See 40 CFR Parts 261.21 - 261.24.)

☒ 1. IGNITABLE
(D001)

☐ 2. CORROSIVE
(D002)

☐ 3. REACTIVE
(D003)

☐ 4. TOXIC
(D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE

NAME & OFFICIAL TITLE (type or print)

DATE SIGNED

Joseph H. Hla

Plant Manager

8/16/80

Chuck Walk



Illinois Environmental Protection Agency • P. O. Box 19276, Springfield, IL 62794-9276

217/782-6762

Refer to: 2010300060 -- Winnebago County
Rockford/Essex Group
ILD062411285
RCRA-Closure

August 31, 1988

Essex Group, Inc.
Attn: Mr. Kenneth Miller
2616 North Main Street
Rockford, Illinois 61103

Dear Mr. Miller:

The closure plan submitted by submitted and prepared by Fehr-Graham & Associates, has been reviewed by this Agency. Your final closure plan to close the three (3) hazardous waste container (S01) storage areas is hereby approved subject to the following conditions.

1. Closure activities must be completed by March 1, 1989. When closure is complete the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within 60 days after closure, or by May 1, 1989.

The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

Log No. C-428

Received: June 22, 1988

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SEP 7 1988
OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION 7



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The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E. The closure plan must include a statement acknowledging this requirement.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

Also along with closure certification, to document the closure activities at your facility, please submit a Closure Documentation Report which includes:

- a. The volume of waste and waste residue removed. The term waste includes wastes resulting from decontamination activities.
- b. A description of the method of waste handling and transport.
- c. The waste manifest numbers.
- d. Copies of the waste manifests.
- e. A description of the sampling and analytical methods used.
- f. A chronological summary of closure activities and the cost involved.
- g. Color photo documentation of closure. Document conditions before, during and after closure.
- h. Tests performed, methods and results.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:



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Illinois Environmental Protection Agency
Division of Land Pollution Control -- #24
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

2. The "Certification Regarding Potential Releases from Solid Waste Management Units" which you submitted is being forwarded to the USEPA for possible future action. The approval of this closure plan neither approves nor disapproves of the aforementioned "Certification".
3. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code, Section 725.211, the Agency reserves the right to amend the closure plan.
4. If contamination is detected, the Agency must be notified in writing within fifteen (15) days. A revised closure plan incorporating exhumation (excavation) or decontamination must be submitted within 45 days of discovery of the contamination.
5. A request for release of financial assurance documents should be included with the closure certification documents.
6. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

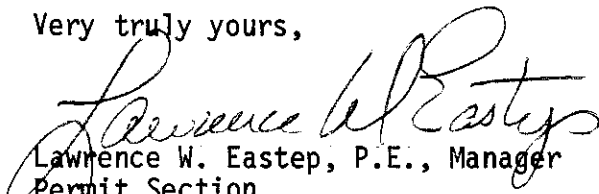


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7. The concrete surfaces shall be visually inspected, photographed and any residue adhering to the surface must be removed by scraping and/or brushing. Following this, the concrete surfaces must be steam cleaned and triple rinsed. All wash and rinse water shall be collected. If analysis of the wash or rinse water samples detect the presence of F001 and F004 then that material must be managed as a hazardous waste. If the wash or rinse water samples exhibit a characteristic of hazardous waste then that material must be managed as a hazardous waste. In any event the material must be managed as a special waste.
8. The wood block flooring that is removed shall be handled as hazardous waste. The concrete floor under the wood block flooring shall be inspected and certified as to the condition of the concrete slab. If cracked, then testing of the material under the cracks must be done and a modified closure plan must be submitted.
9. Based on Agency review of the sampling results to be submitted, the Agency may require modification of the closure plan to include additional sampling work and/or other closure activities as determined necessary to satisfy 35 IAC, 725.211.

Should you have any questions regarding this matter, please contact Eugene W. Dingledine at 217/782-5504.

Very truly yours,


Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:EWD:mab/2536j/11-14

Attachment

cc: Rockford Region
Division File - Closure
Andy Vollmer
Gene D. Fox, P.E.
USEPA Region V -- Chuck Wilk ✓
USEPA Region V -- Mary Murphy
Compliance Section
Gehr-Graham & Assoc.



ATTACHMENT

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

Closure Log C-428

The hazardous waste management S01 Units at the facility described in this document have been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number _____

Facility Name _____

Signature of Owner/Operator _____

Name and Title _____

Signature of Registered P.E. _____

Name of Registered P.E. and Illinois
Registration Number _____

Date _____

EWD:mab/2536j/



Curtin Matheson Scientific, Inc.
1225 N MICHAEL DRIVE

WOOD DALE, IL 60191-1019

FISONS

MATERIAL SAFETY DATA SHEET

MAIL TO: ESSEX GROUP

2816 N. MAIN STREET

ROCKFORD, IL 61103

SECTION 1 - NAME AND PRODUCT

MANUFACTURER NAME AND ADDRESS

EM SCIENCE
A DIV OF EM INDUSTRIES
P.O. BOX 70
GIBBSTOWN NJ 08027
EMERGENCY PHONE 1-800-424-9300

CHEMICAL NUMBER: MNX0409-7

ITEM NUMBER: 0401184

VNDR CATLG NBR:

ENTRY DATE: 02-24-90

CHANGE DATE: 03-18-91

COMMON NAME (ON LABEL)

NITRIC ACID

CHEMICAL FAMILY

INORGANIC ACID

TRADE NAME & SYNONYMS

NITRIC ACID
AQUAFORTIS; HYDROGEN NITRATE

CHEMICAL FORMULA

HNO₃ (APPROX. 70% IN H₂O)

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS	% (WT)	TLV	PEL
NITRIC ACID	7697-37-2	100.00	.000 SEC.5	.000 SEC.5

PEL: Permissible Exposure Limit established by the Occupational Safety and Health Administration (OSHA).

TLV: Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1986-87.

OTHER INGREDIENT INFORMATION
NONE OTHER THAN SPECIFIED PRODUCT.

SECTION 3 - PHYSICAL DATA

BOILING POINT 122C	VOLATILE BY VOLUME (%) INDETERMINATE	VAPOR PRESSURE 62 20C
MELTING POINT -34C	VAPOR DENSITY @ 2.5	SOLUBILITY IN WATER MISCIBLE
EVAPORATION RATE (= 1) N/A	SPECIFIC GRAVITY 1.41	

APPEARANCE AND ODOR
COLORLESS LIQUID WITH ACID ODOR.

OTHER PHYSICAL DATA
MOLECULAR WEIGHT: 63.01

SECTION 4 - FIRE AND EXPLOSION DATA**FLASH POINT**

NONCOMBUSTIBLE

LOWER EXPLOSIVE LIMIT

N/A

UPPER EXPLOSIVE LIMIT

N/A

EXTINGUISHING MEDIA

WATER SPRAY, DRY CHEMICAL

UNUSUAL FIRE AND EXPLOSION HAZARDS

CAN REACT EXPLOSIVELY WITH CERTAIN REDUCING AGENTS AND
COMBUSTIBLES; SUCH AS, METAL POWDERS, CARBIDES, H₂S, TURPENTINE.

SPECIAL FIRE FIGHTING PROCEDURES

WEAR

SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

SECTION 5 - HEALTH HAZARD DATA**HEALTH HAZARDS (ACUTE & CHRONIC)**

SEE SIGNS AND SYMPTOMS OF EXPOSURE.

PRIMARY ROUTES OF EXPOSURE

INHALATION, INGESTION OR SKIN CONTACT.

SIGNS AND SYMPTOMS OF EXPOSURE

CAUSES SEVERE BURNS

ON CONTACT WITH ANY BODY TISSUE. INHALATION OF VAPORS OR MISTS CAN CAUSE
SEVERE BURNS TO RESPIRATORY PASSAGES, PNEUMONIA AND PULMONARY EDEMA.
CAN BE FATAL IF INHALED OR SWALLOWED.
SYMPTOMS OF LUNG INJURY MAY BE DELAYED.

SECTION 5 - HEALTH HAZARD DATA (CONTINUED)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE RESPIRATORY CONDITIONS

CARCINOGENICITY

THE MATERIAL IS
NOT LISTED AS A CANCER CAUSING AGENT.

NTP ☐ Yes ☒ No

IARC ☐ Yes ☒ No

OSHA ☐ Yes ☒ No

EMERGENCY AND FIRST AID PROCEDURES

GET MEDICAL

ASSISTANCE FOR ALL CASES OF OVEREXPOSURE. SKIN: IMMEDIATELY FLUSH THOROUGHLY WITH
LARGE AMOUNTS OF WATER. EYES: IMMEDIATELY FLUSH THOROUGHLY WITH WATER FOR AT LEAST
15 MINUTES. INHALATION: REMOVE TO FRESH AIR; GIVE ARTIFICIAL RESPIRATION IF
BREATHING HAS STOPPED. INGESTION: DO NOT
INDUCE VOMITING; IF CONSCIOUS, GIVE WATER FREELY AND GET MEDICAL ATTENTION.

THRESHOLD LIMITS / TOXICITY DATA

ACGIH TLV/OSHA PEL (TWA)..... 2 PPM; STEL 4 PPM TOXICITY
DATA..... UNR-MAN LDLO: 110 MG/KG

SECTION 6 - REACTIVITY DATA

STABILITY Unstable ☐ Stable ☒

CONDITIONS TO AVOID

STRONG OXIDIZER! AVOID CONTACT WITH
ALL COMBUSTIBLE MATTER.

INCOMPATIBILITY (MATERIALS TO AVOID)

STEAM; BASES;
REDUCING AGENTS, ORGANIC MATERIALS,
COMBUSTIBLE MATTER.

SECTION 6 - REACTIVITY DATA (CONTINUED)

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
NOX

HAZARDOUS POLYMERIZATION May Occur ☐ Will Not Occur ☒
CONDITIONS TO AVOID
DOES NOT OCCUR

SECTION 7 - SPILL, LEAK, AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
DIKE SPILL WITH SAND AND SODA ASH. DILUTE WITH WATER
AND TAKE UP FOR PROPER DISPOSAL.

WASTE DISPOSAL METHOD
TO BE PERFORMED IN COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL
REGULATIONS.

SECTION 8 - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
MATERIAL MUST BE

HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD OR WITH EQUIVALENT VENTILATION.
PROTECTIVE GLOVES (NATURAL RUBBER, NEOPRENE, PVC OR
EQUIVALENT) MUST BE WORN TO PREVENT SKIN CONTACT.
PROTECTIVE CLOTHING (NATURAL RUBBER, NEOPRENE, PVC OR EQUIVALENT) SHOULD BE WORN
WHEN HANDLING THIS MATERIAL. SAFETY GLASSES WITH SIDE SHIELDS MUST
BE WORN AT ALL TIMES. NIOSH/MSHA-APPROVED RESPIRATOR SHOULD BE WORN IN THE
ABSENCE OF ADEQUATE VENTILATION.

LOCAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

MECHANICAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

SPECIAL VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

SECTION 8 - SPECIAL PROTECTION INFORMATION (CONTINUED)

OTHER VENTILATION

SEE SECTION 8 - RESPIRATORY PROTECTION

PROTECTIVE GLOVES

SEE SECTION 8 - RESPIRATORY PROTECTION

EYE PROTECTION

SEE SECTION 8 - RESPIRATORY PROTECTION

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

SEE SECTION 8 - RESPIRATORY PROTECTION.

SECTION 9 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

KEEP CONTAINER

TIGHTLY CLOSED AND PROTECTED FROM PHYSICAL DAMAGE. STORE IN A COOL, DRY AREA AWAY FROM COMBUSTIBLE OR REDUCING MATERIALS. DO NOT BREATHE VAPOR OR MIST.

DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

RETAINED RESIDUE MAY MAKE EMPTY CONTAINERS HAZARDOUS; USE CAUTION. WASH THOROUGHLY AFTER HANDLING. DO NOT TAKE INTERNALLY. EYE WASH AND SAFETY EQUIPMENT SHOULD BE READILY AVAILABLE.

SECTION 10 - OTHER INFORMATION

MISCELLANEOUS INFO.

HEALTH

..... 3 FLAMMABILITY 0; REACTIVITY : 0 SPECIAL HAZARDS: OXY;

DOT SHIPPING NAME: NITRIC ACID; DOT NUMBER.....

UN2031; COMMENTS.....

TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY PRODUCE ADVERSE REPRODUCTIVE

EFFECTS. N/A = NOT AVAILABLE.

N/A = NOT APPLICABLE.

THE INFORMATION, DATA AND RECOMMENDATIONS CONTAINED HEREIN WERE PROVIDED TO CMS BY THE MANUFACTURER NAMED ON THIS MATERIAL SAFETY DATA SHEET. CMS MAKES NO WARRANTY OF ANY KIND WHATEVER WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. CMS RESERVES THE RIGHT TO REVISE THIS MATERIAL SAFETY DATA SHEET AS NEW INFORMATION IS PROVIDED TO IT BY ITS MANUFACTURER.



MATERIAL SAFETY DATA

OCEAN NETWORK EMERGENCY PHONE 1-800-OLIN-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I. PRODUCT IDENTIFICATION

REVISION NO : 9
REVISION DATE : 1/02/90
PRODUCT CODE : CPE111449
FILE NUMBER : CPE00031.0007
PRODUCT NAME: CAUSTIC SODA SOLUTION
SYNONYMS: Sodium hydroxide, Caustic, Alkali, Caustic lye
CHEMICAL FAMILY: Alkali, Base
FORMULA: NaOH (active ingredient)
DESCRIPTION: Neutralizing agent, sodium source
OSHA CLASSIFICATION: Corrosive, eye hazard, lung toxin, skin hazard

II. COMPONENT DATA

PRODUCT COMPOSITION

CAS or CHEMICAL NAME: Sodium hydroxide
CAS NUMBER: 1310-73-2
PERCENTAGE RANGE: 45-50%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS:

	OSHA(PEL)	ACGIH(TLV)	OLIN
	ppm mg/cubic-meter	ppm mg/cubic-meter	ppm mg/cubic-meter
TWA:	None	None	None
CEILING:	2	2	None
STEL:	None	None	None

CAS or CHEMICAL NAME: Water
CAS NUMBER: 7732-18-5
PERCENTAGE RANGE: 45-55%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

III. PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.

STORAGE CONDITIONS:

DO NOT STORE AT TEMPERATURES ABOVE: 130 Deg.C (266 Deg.F)

PRODUCT STABILITY AND COMPATIBILITY

SHELF LIFE LIMITATIONS: Indefinite if in closed container.

INCOMPATIBLE MATERIALS FOR PACKAGING: Aluminum, zinc, tin, wood, paper

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Acids, nitrogen containing organics, phosphorous, explosives, organic peroxides, aluminum, zinc, tin

IV. PHYSICAL DATA

APPEARANCE: Clear viscous liquid

FREEZING POINT: 10-12 Deg.C (50-54 Deg.F)

BOILING POINT: 130-140 Deg.C (266-284 Deg.F)

DECOMPOSITION TEMPERATURE: None

SPECIFIC GRAVITY: 1.482-1.530

BULK DENSITY: Not Applicable

pH @ 25 DEG.C: 13 (0.5% Solution)

VAPOR PRESSURE @ 25 DEG.C: Approximately equal to water

SOLUBILITY IN WATER: Miscible

VOLATILES, PERCENT BY VOLUME: 45-55

EVAPORATION RATE: No Data

VAPOR DENSITY: No Data

MOLECULAR WEIGHT: 40.01 (Active agent)

ODOR: None

COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

V. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:

RESPIRATORY PROTECTION: Respirator protection not normally needed since the volatility and toxicity are low. If vapors, mists, or aerosols are generated, wear a NIOSH/MSHA respirator approved for dusts and mists.

VENTILATION: Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.

SKIN PROTECTIVE EQUIPMENT: Use chemical safety goggles and impermeable gloves.

EQUIPMENT SPECIFICATIONS:

RESPIRATOR TYPE: Not normally needed

GLOVE TYPE: Natural rubber

BOOT TYPE: Not normally needed

APRON TYPE: Natural rubber

PROTECTIVE SUIT: Not normally needed

OTHER: Emergency shower/eye wash station



MATERIAL SAFETY DATA

VI. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:

FLAMMABLE: No

COMBUSTIBLE: No

PYROPHORIC: No

FLASH POINT: Not Applicable

AUTOIGNITION TEMPERATURE: Not Applicable

FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): Not Applicable

NFPA RATINGS:

Health: 3

Flammability: 0

Reactivity: 1

Special Hazard Warning: CORROSIVE

HMIS RATINGS:

Health: 3

Flammability: 0

Reactivity: 1

EXTINGUISHING MEDIA: Not Applicable

FIRE FIGHTING TECHNIQUES AND COMMENTS: Use water to cool containers exposed to fire. Contact with reactive metals, e.g., aluminum may result in the generation of flammable hydrogen gas. See Section XI for protective equipment for fire fighting. Sodium Hydroxide may react with water. (See Section VII). On small fires, use dry chemical, carbon dioxide, water spray, or foam. On large fires, use water flooding quantities as a fog.

VII. REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:

TEMPERATURES ABOVE: None.

MECHANICAL SHOCK OR IMPACT: No

ELECTRICAL (STATIC) DISCHARGE: No

OTHER: Contact with carbohydrates, aluminum, zinc, tin.

HAZARDOUS POLYMERIZATION: Will Not Occur

INCOMPATIBLE MATERIALS: Acids, nitrogen containing organics, carbohydrates, phosphorous, explosives, organic peroxides, halogen compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: None

OTHER CONDITIONS TO AVOID: Dilution with water except under controlled conditions. Very high heat of dilution will cause boiling and spattering.

SUMMARY OF REACTIVITY:

OXIDIZER: No
PYROPHORIC: No
ORGANIC PEROXIDE: No
WATER REACTIVE: No
CORROSIVE: Yes

VIII. FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, the clothing should be removed immediately and should be laundered before re-use.

INGESTION: Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX. TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION

Inhalation, Skin, Eye, Ingestion

HARMFUL IF INHALED OR INGESTED.

HARMFUL IF EXPOSED TO SKIN OR EYES.

HARMFUL IF SWALLOWED.



MATERIAL SAFETY DATA

HUMAN THRESHOLD RESPONSE DATA

ODOR THRESHOLD: There is no data for odor threshold.

IRRITATION THRESHOLD: There is no data for irritation threshold.

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: The IDLH level for sodium hydroxide is 200 mg/cubic-meter.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION:

Inhalation of this material is irritating to the nose, mouth, throat, and lungs. It may also cause burns to the respiratory tract which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage.

Chronic (repeated) inhalation exposure may cause impairment of lung function and permanent lung damage.

EYE:

Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

SKIN:

Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause destruction of the dermis with impairment of the skin at site of contact to regenerate. Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction.

INGESTION:

Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration.

There are no known or reported effects from chronic exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Asthma and respiratory and cardiovascular disease

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

There are no chemicals known to enhance the toxicity of the product.

ANIMAL TOXICOLOGY

Acute Toxicity:

Inhalation LC 50 - > 40 mg/cubic-meter/1 hour (rat)

Oral LD 50 - > 500 mg/kg (rabbit)

Dermal LD 50 - > 2 g/kg (rabbit)

Causes burns to eyes and skin.

Aquatic Toxicity:

Aquatic Toxicity Rating 2 (TLM96: 100-10 ppm)

TLM96 - Gambusia Affinis (Mosquito-Fish) 125 ppm

TLM48 - Brown Shrimp 33-100 ppm, Cockle 330-1000 ppm, armed bullhead
33-100 ppm, unspecified platfish 33-100 ppm

TLM24 - Small Bass 31.7 ppm, Bluegill 76.6 ppm

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY

There are no known or reported effects on reproductive function or fetal development.

CHRONIC TARGET ORGAN TOXICITY:

There are no known or reported effects from repeated exposure.

CARCINOGENICITY:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

MUTAGENICITY:

This product is not known or reported to be mutagenic.

X. TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101:

Caustic Soda Liquid, CORROSIVE MATERIAL, UN 1824

REPORTABLE QUANTITY: 1000 lbs. (Per 49 CFR 172.101, Appendix)



MATERIAL SAFETY DATA

The material described above is subject to the U.S. DOT HAZARDOUS MATERIALS REGULATIONS via the modes and packaging quantities indicated below with the letter "x":

MODE	PACKAGING QUANTITIES		
<input checked="" type="checkbox"/> Rail	<input checked="" type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Non-Bulk	
<input checked="" type="checkbox"/> Motor	<input checked="" type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Non-Bulk	
<input checked="" type="checkbox"/> Water	<input checked="" type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Non-Bulk	
<input checked="" type="checkbox"/> Air	<input checked="" type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Non-Bulk	

The applicable packaging sections in 49 CFR are 173.244 and 173.249.

DOT EMERGENCY GUIDE NUMBER: 60

XI. SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: 2000 lbs. (Per 40 CFR 302.4)

SPILL MITIGATION PROCEDURES: Hazardous concentrations in air may be found in local spill area in the form of a mist which may cause skin irritation and breathing problems. Stop source of spill as soon as possible, if safe to do so.

Air Release - Will normally be found in a mist form and evacuation from the mist area is the only advisable approach. Correction of the source of mist is of the utmost importance.

Water Release - This material is heavier than water. This material is soluble in water. This material is subject to emulsification and must be removed via a vacuum system or neutralized and absorbed as necessary, with various commercial absorbents which are available.

Notify all down-stream industrial, municipal and public operation of this spill and advise them to monitor until otherwise notified.

Land Spill - Dike or divert flow of material to a diked area as soon as possible. If necessary create an excavation large enough to contain the spill and associated neutralization materials. To reduce environmental damage, line the excavated surface with a material to which it is compatible and begin neutralization process or remove by vacuum, or pumping.

This spill materials may be absorbed in: Saw dust, sand, clay soil, vermiculite or commercial absorbents.

SPILL RESIDUES:

Dispose of per guidelines under Section XII, WASTE DISPOSAL.

This material may be neutralized for disposal; you are requested to contact OCEAN at 800-OLIN-911 before beginning any such operation.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:

Additional respiratory protection is necessary when a spill or fire involving this product occurs. You are recommended to use a: Self contained breathing apparatus(SCBA).

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, gloves (see below for compatible materials), hard hat, splash-proof goggles, full face shield and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are:

Neoprene	Chlorinated Polyethylene
Polyvinyl chloride	Butyl Rubber
Viton	Saranex

Protection concerns must also address the potential of the physical characteristics of this product as FLAMMABLE AND EXPLOSIVE, AS HYDROGEN GAS CAN BE FORMED UPON CONTACT WITH METAL SUCH AS BRASS, ALUMINUM, MAGNESIUM, LEAD, TIN OR ZINC.

POISON IF TAKEN INTERNALLY.

XII. WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.



MATERIAL SAFETY DATA

XIII. ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT: This substance is listed on the Toxic Substances Control Act inventory.

SUPERFUND AMENDMENT AND REAUTHORIZATION ACT TITLE III:

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH: Immediate (Acute), Delayed (Chronic)

PHYSICAL: None

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:

EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:

None Established

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:

This mixture or tradename product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR 372.

CHEMICALS LISTED ARE: Sodium Hydroxide (Solution)

XIV. ADDITIONAL INFORMATION

No Additional Information

XV. MAJOR REFERENCES

1. ACGIH Guide to Protective Clothing. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1987.
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5. Casarett, L. and J. Doull, Eds., Toxicology: The Basic Science of Poisons, 3rd Ed., New York: Macmillan Publishing Co., Inc. 1986.
6. CERIS (Chemical Emergency Response Information System) On Line Database. Association of American Railroads.
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9. Code of Federal Regulations, Titles 21, 29, 40 and 49. Washington, DC: U.S. Government Printing Office.
10. Emergency Response Guide (D.O.T.). Washington, DC: U.S. Government Printing Office, 1987.
11. Fire Protection Guide on Hazardous Materials, 9th Ed., National Fire Protection Association, Batterymarch Park, Quincy, MA, 1986.
12. Gosselin, R., et al., Gosselin-Clinical Toxicology of Commercial Products, 5th Ed., Baltimore: Williams and Wilkins, 1984.
13. Hazardline, Occupational Health Services Inc., New York, NY.
14. IARC Monogram on the Evaluation of Carcinogenic Risk of Chemicals to Man., Geneva: World Health Organization, International Agency for Research on Cancer.
15. Lenga, R., The Sigma-Aldrich Library of Chemical Safety Data, 1st Ed., Milwaukee, WI: Sigma-Aldrich Corporation, 1985.
16. Lewis, R. and D. Sweet, Eds., Registry of Toxic Effects of Chemical Substances, 1985-1986, Washington, DC: U.S. Government Printing Office, 1987.
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19. Olin Respiratory Protection Manual.
20. Sax, N. Irving, Dangerous Properties of Hazardous Materials 6th Ed., New York: Van Nostrand Reinhold Company, 1984.
21. Threshold Limit Values and Biological Exposure Indices for 1988-89. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1987.
22. Toxic Substances Control Act Inventory, Washington, DC: U.S. Government Printing Office, 1986.

THE INFORMATION IN THIS MATERIAL SAFETY SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

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